



2350 W Marland Blvd Hobbs, NM 88240

Closure Report

September 10, 2019

Re: Crow Federal SWD #001

API# 30-015-42469

Case # 2RP-4990

To: Robert Hamlet

Environmental Specialist-New Mexico Oil Conservation Division Energy, Minerals and
Natural Resources Department 811 S. 1st Street Artesia, NM 88210

On 8/17/2018 a release occurred due to a stainless valve on a riser at the well head was broken off by livestock. An initial C-141 was sent to NMOCD and approved by NMOCD on 10/1/2018. The Crow Federal SWD #001 is located east of Loco Hills in unit letter A section 9 township 17S range 31E (GPS Coordinates: 32.85386 -103.86825). A Remediation Plan was submitted to NMOCD and approved by NMOCD on April 25, 2019.

On June 3, 2019 final five point bottom and wall composite samples in accordance with the NMOCD approved plan were collected and submitted to a commercial laboratory for analysis of chloride, TPH, and BTEX. The laboratory results for all samples were below table one standards for releases greater than 100 feet to groundwater. The excavation was backfilled with clean imported caliche and contoured to the surrounding area.

Apache Corporation has completed the remediation in accordance with the NMOCD approved Remediation plan and respectfully request that 2RP-4990 be closed.

Enclosed: C-141, Maps, Sample Data, Laboratory Results, Photos, and Field Notes

Submitted by;

Bruce Baker

Environmental Technician

larry.baker@apachecorp.com

Cell# 432-631-6982

Off# 575-393-7106

49IWP-190910-C-1410

District I
1625 N French Dr., Hobbs, NM 88240
District II
811 S First St., Artesia, NM 88210
District III
1000 Rio Brazos Road, Aztec, NM 87410
District IV
1220 S St Francis Dr., Santa Fe, NM 87505

State of New Mexico
Energy Minerals and Natural
Resources Department

Oil Conservation Division
1220 South St. Francis Dr.
Santa Fe, NM 87505

Form C-141
Revised August 24, 2018
Submit to appropriate OCD District office

Incident ID	NMAP1827468378
District RP	2RP-4990
Facility ID	N/A
Application ID	pMAP1827468112

Release Notification

Responsible Party

Responsible Party	Apache Corporation	OGRID	873
Contact Name	Bruce Baker	Contact Telephone	432-631-6982
Contact email	larry.baker@apachecorp.com	Incident # (assigned by OCD)	NMAP1827468378
Contact mailing address	2350 W. Marland BLVD Hobbs, NM 88240		

Location of Release Source

Latitude 32.85386 Longitude -103.86825
(NAD 83 in decimal degrees to 5 decimal places)

Site Name	Crow Federal SWD # 001	Site Type	SWD
Date Release Discovered	8/17/2018	API# (if applicable)	30-015-42469

Unit Letter	Section	Township	Range	County
A	9	17S	31E	Eddy

Surface Owner: ☐ State ☒ Federal ☐ Tribal ☐ Private (Name: _____)

Nature and Volume of Release

Material(s) Released (Select all that apply and attach calculations or specific justification for the volumes provided below)

<input type="checkbox"/> Crude Oil	Volume Released (bbls)	Volume Recovered (bbls)
<input checked="" type="checkbox"/> Produced Water	Volume Released (bbls) 7 barrels	Volume Recovered (bbls) 1 barrel
	Is the concentration of dissolved chloride in the produced water >10,000 mg/l?	<input type="checkbox"/> Yes <input type="checkbox"/> No
<input type="checkbox"/> Condensate	Volume Released (bbls)	Volume Recovered (bbls)
<input type="checkbox"/> Natural Gas	Volume Released (Mcf)	Volume Recovered (Mcf)
<input type="checkbox"/> Other (describe)	Volume/Weight Released (provide units)	Volume/Weight Recovered (provide units)

Cause of Release A stainless valve on a riser at the well head was broken off by livestock.


State of New Mexico
Oil Conservation Division

Incident ID	NMAP1827468378
District RP	2RP-4990
Facility ID	N/A
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Was this a major release as defined by 19.15.29.7(A) NMAC? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If YES, for what reason(s) does the responsible party consider this a major release?
If YES, was immediate notice given to the OCD? By whom? To whom? When and by what means (phone, email, etc)? 	

Initial Response

The responsible party must undertake the following actions immediately unless they could create a safety hazard that would result in injury

<input checked="" type="checkbox"/> The source of the release has been stopped. <input checked="" type="checkbox"/> The impacted area has been secured to protect human health and the environment. <input checked="" type="checkbox"/> Released materials have been contained via the use of berms or dikes, absorbent pads, or other containment devices. <input checked="" type="checkbox"/> All free liquids and recoverable materials have been removed and managed appropriately.	
If all the actions described above have <u>not</u> been undertaken, explain why: 	
Per 19.15.29.8 B. (4) NMAC the responsible party may commence remediation immediately after discovery of a release. If remediation has begun, please attach a narrative of actions to date. If remedial efforts have been successfully completed or if the release occurred within a lined containment area (see 19.15.29.11(A)(5)(a) NMAC), please attach all information needed for closure evaluation.	
I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to OCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the OCD does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to groundwater, surface water, human health or the environment. In addition, OCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.	
Printed Name: <u>Bruce Baker</u>	Title: <u>Environmental Tech. SR.</u>
Signature: <u>Bruce Baker</u>	Date: <u>10/11/18</u>
email: <u>larry.baker@apachecorp.com</u>	Telephone: <u>432-631-6982</u>
OCD Only Received by: <u></u>	
Date: <u>10/01/18</u>	

Incident ID	
District RP	
Facility ID	
Application ID	

Site Assessment/Characterization

This information must be provided to the appropriate district office no later than 90 days after the release discovery date

What is the shallowest depth to groundwater beneath the area affected by the release?	<u>None</u> (R bgs)
Did this release impact groundwater or surface water?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within 300 feet of a continuously flowing watercourse or any other significant watercourse?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within 200 feet of any lakebed, sinkhole, or playa lake (measured from the ordinary high-water mark)?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within 300 feet of an occupied permanent residence, school, hospital, institution, or church?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within 500 horizontal feet of a spring or a private domestic fresh water well used by less than five households for domestic or stock watering purposes?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within 1000 feet of any other fresh water well or spring?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within incorporated municipal boundaries or within a defined municipal fresh water well field?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within 300 feet of a wetland?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release overlying a subsurface mine?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release overlying an unstable area such as karst geology?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within a 100-year floodplain?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Did the release impact areas not on an exploration, development, production, or storage site?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No

Attach a comprehensive report (electronic submittals in .pdf format are preferred) demonstrating the lateral and vertical extents of soil contamination associated with the release have been determined. Refer to 19.15.29.11 NMAC for specifics.

Characterization Report Checklist: *Each of the following items must be included in the report.*

- ☒ Scaled site map showing impacted area, surface features, subsurface features, delineation points, and monitoring wells.
- ☒ Field data
- ☒ Data table of soil contaminant concentration data
- ☒ Depth to water determination
- ☒ Determination of water sources and significant watercourses within 1/2-mile of the lateral extents of the release
- ☒ Boring or excavation logs
- ☒ Photographs including date and GIS information
- ☒ Topographic/Aerial maps
- ☒ Laboratory data including chain of custody

If the site characterization report does not include completed efforts at remediation of the release, the report must include a proposed remediation plan. That plan must include the estimated volume of material to be remediated, the proposed remediation technique, proposed sampling plan and methods, anticipated timelines for beginning and completing the remediation. The closure criteria for a release are contained in Table 1 of 19.15.29.12 NMAC, however, use of the table is modified by site- and release-specific parameters.

State of New Mexico
Oil Conservation Division

Incident ID	
District RP	
Facility ID	
Application ID	

Remediation Plan**Remediation Plan Checklist:** *Each of the following items must be included in the plan.*

- ☒ Detailed description of proposed remediation technique
- ☒ Scaled sitemap with GPS coordinates showing delineation points
- ☒ Estimated volume of material to be remediated
- ☒ Closure criteria is to Table 1 specifications subject to 19.15.29.12(C)(4) NMAC
- ☐ Proposed schedule for remediation (note if remediation plan timeline is more than 90 days OCD approval is required)

Deferral Requests Only: *Each of the following items must be confirmed as part of any request for deferral of remediation.*

- ☐ Contamination must be in areas immediately under or around production equipment where remediation could cause a major facility deconstruction.
- ☐ Extents of contamination must be fully delineated.
- ☐ Contamination does not cause an imminent risk to human health, the environment, or groundwater.

I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to OCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the OCD does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to groundwater, surface water, human health or the environment. In addition, OCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.

Printed Name: Bruce Baker Title: Environmental Technician sr
 Signature: Bruce Baker Date: 11-16-18
 email: larry.baker@apackcorp.com Telephone: 432-631-6982

OCD Only

Received by: Robert Hamlet Date: 4/25/2019

☒ Approved ☐ Approved with Attached Conditions of Approval ☐ Denied ☐ Deferral Approved

Signature: [Signature] Date: 4/25/2019

State of New Mexico
Oil Conservation Division

Incident ID	
District RP	
Facility ID	
Application ID	

Closure

The responsible party must attach information demonstrating they have complied with all applicable closure requirements and any conditions or directives of the OCD. This demonstration should be in the form of a comprehensive report (electronic submittals in .pdf format are preferred) including a scaled site map, sampling diagrams, relevant field notes, photographs of any excavation prior to backfilling, laboratory data including chain of custody documents of final sampling, and a narrative of the remedial activities. Refer to 19.15.29.12 NMAC.

Closure Report Attachment Checklist: *Each of the following items must be included in the closure report.*

- ☒ A scaled site and sampling diagram as described in 19.15.29.11 NMAC
- ☒ Photographs of the remediated site prior to backfill or photos of the liner integrity if applicable (Note: appropriate OCD District office must be notified 2 days prior to liner inspection)
- ☒ Laboratory analyses of final sampling (Note: appropriate ODC District office must be notified 2 days prior to final sampling)
- ☒ Description of remediation activities

I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to OCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the OCD does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to groundwater, surface water, human health or the environment. In addition, OCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations. The responsible party acknowledges they must substantially restore, reclaim, and re-vegetate the impacted surface area to the conditions that existed prior to the release or their final land use in accordance with 19.15.29.13 NMAC including notification to the OCD when reclamation and re-vegetation are complete.

Printed Name: Bruce Baker Title: Environmental Tech
 Signature: Bruce Baker Date: 9/10/19
 email: larry.baker@apachecorp.com Telephone: 432-631-6982

OCD Only

Received by: _____ Date: _____

Closure approval by the OCD does not relieve the responsible party of liability should their operations have failed to adequately investigate and remediate contamination that poses a threat to groundwater, surface water, human health, or the environment nor does not relieve the responsible party of compliance with any other federal, state, or local laws and/or regulations.

Closure Approved by: _____ Date: _____

Printed Name: _____ Title: _____

Wall Samples

Sample Pt.	Depth	Chloride	Benzene	Toluene	Ethylbenzene	Total Xylenes	Total BTEX	GRO	DRO	EXT DRO	GPS
WC 1	1'	4560	<0.050	<0.050	<0.050	<0.150	<0.300	<10	<10	<10	32.8538156 -103.8684553
WC 2	1'	368	<0.050	<0.050	<0.050	<0.150	<0.300	<10	<10	<10	32.8535230 -103.8685736
WC 2	1'	2240	<0.050	<0.050	<0.050	<0.150	<0.300	<10	<10	<10	32.8534664 -103.8684475
WC 4	1'	1840	<0.050	<0.050	<0.050	<0.150	<0.300	<10	<10	<10	32.8532957 -103.8682216
WC 5	1'	3160	<0.050	<0.050	<0.050	<0.150	<0.300	<10	<10	<10	32.8536169 -103.8683688
WC 6	6"	816	<0.050	<0.050	<0.050	<0.150	<0.300	<10	<10	<10	32.8540038 -103.8683175
WC 7	n/a	2640	<0.050	<0.050	<0.050	<0.150	<0.300	<10	<10	<10	32.8536939 -103.8683138

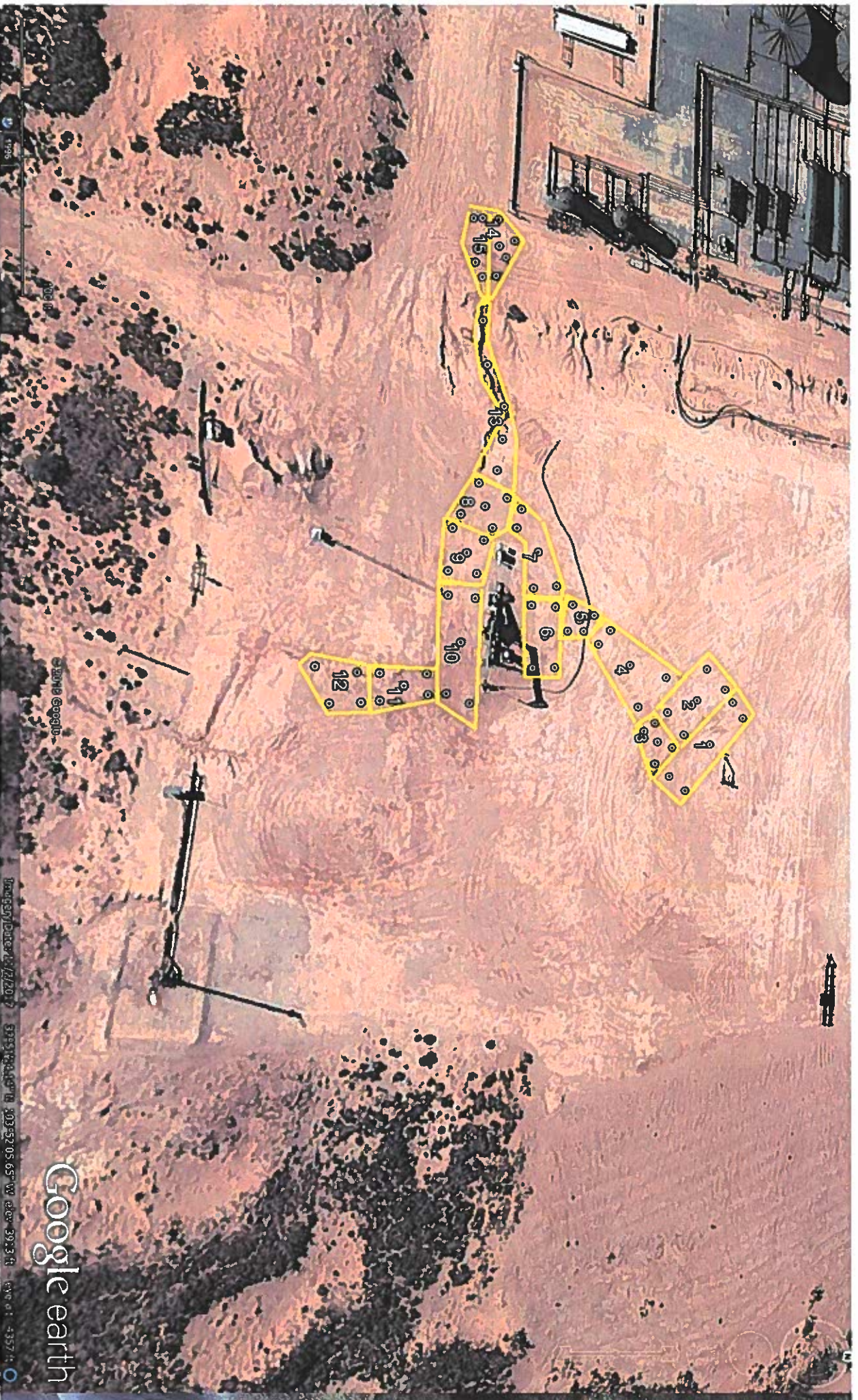
Bottom Samples

Sample Pt.	Depth	Chloride	Benzene	Toluene	Ethylbenzene	Total Xylenes	Total BTEX	GRO	DRO	EXT DRO	GPS
BFC 1	6"-1'	2400	<0.050	<0.050	<0.050	<0.150	<0.300	<10	<10	<10	32.85381 -103.86821
BFC 2	6"-1'	4880	<0.050	<0.050	<0.050	<0.150	<0.300	<10	<10	<10	32.85377 -103.86831
BFC 3	6"-1'	48	<0.050	<0.050	<0.050	<0.150	<0.300	<10	<10	<10	32.85375 -103.86824
BFC 4	6"-1'	2240	<0.050	<0.050	<0.050	<0.150	<0.300	<10	<10	<10	32.85371 -103.86834
BFC 5	6"-1'	1090	<0.050	<0.050	<0.050	<0.150	<0.300	<10	<10	<10	32.85362 -103.86841
BFC 6	6"-1'	2880	<0.050	<0.050	<0.050	<0.150	<0.300	<10	219	52.4	32.85355 -103.86847
BFC 7	6"-1'	7440	<0.050	<0.050	<0.050	<0.150	<0.300	<10	<10	<10	32.8537 -103.86847
BFC 8	6"-1'	240	<0.050	<0.050	<0.050	<0.150	<0.300	<10	<10	<10	32.85348 -103.86857
BFC 9	6"-1'	7120	<0.050	<0.050	<0.050	<0.150	<0.300	<10	<10	<10	32.8535075 -103.8684745
BFC 10	6"-1'	5120	<0.050	<0.050	<0.050	<0.150	<0.300	<10	156	29.9	32.8534880 -103.8683111
BFC 11	6"-1'	112	<0.050	<0.050	<0.050	<0.150	<0.300	<10	125	39.2	32.8533509 -103.8682823
BFC 12	6"-1'	32	<0.050	<0.050	<0.050	<0.150	<0.300	<10	12.1	<10.0	32.8533537 -103.8682755
BFC 13	6"-1'	48	<0.050	<0.050	<0.050	<0.150	<0.300	<10	<10	<10	32.8535044 -103.8687164
BFC 14	6"-1'	48	<0.050	<0.050	<0.050	<0.150	<0.300	<10	<10	<10	32.8534940 -103.8689049
BFC 15	6"-1'	2000	<0.050	<0.050	<0.050	<0.150	<0.300	<10	<10	<10	32.8535275 -103.8688720

Wall Samples



Bottom Samples



Analytical Results For:

APACHE CORP - HOBBS
BRUCE BAKER
2350 W. MARLAND BLVD.
HOBBS NM, 88240
Fax To: (575) 393-2432

Received: 06/03/2019
Reported: 06/10/2019
Project Name: CROW FED SWD #1
Project Number: NONE GIVEN
Project Location: NOT GIVEN

Sampling Date: 06/03/2019
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Tamara Oldaker

Sample ID: WC # 1 @ 1' (H901937-01)

BTX 8021B		mg/kg		Analyzed By: ms					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	06/06/2019	ND	2.28	114	2.00	3.69	
Toluene*	<0.050	0.050	06/06/2019	ND	2.29	114	2.00	4.21	
Ethylbenzene*	<0.050	0.050	06/06/2019	ND	2.13	106	2.00	2.62	
Total Xylenes*	<0.150	0.150	06/06/2019	ND	6.39	106	6.00	2.04	
Total BTX	<0.300	0.300	06/06/2019	ND					

Surrogate: 4-Bromofluorobenzene (PIE) 103 % 73.3-129

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	4560	16.0	06/06/2019	ND	416	104	400	0.00	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	06/05/2019	ND	220	110	200	5.65	
DRO >C10-C28*	<10.0	10.0	06/05/2019	ND	199	99.6	200	7.49	
EXT DRO >C28-C36	<10.0	10.0	06/05/2019	ND					

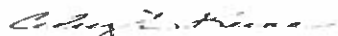
Surrogate: 1-Chlorooctane 90.0 % 41-142

Surrogate: 1-Chlorooctadecane 90.0 % 37.6-147

Cardinal Laboratories

*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

 APACHE CORP - HOBBS
 BRUCE BAKER
 2350 W. MARLAND BLVD.
 HOBBS NM, 88240
 Fax To: (575) 393-2432

 Received: 06/03/2019
 Reported: 06/10/2019
 Project Name: CROW FED SWD #1
 Project Number: NONE GIVEN
 Project Location: NOT GIVEN

 Sampling Date: 06/03/2019
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

Sample ID: WC # 2 @ 1' (H901937-02)

BTX 8021B		mg/kg		Analyzed By: ms					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	06/06/2019	ND	2.28	114	2.00	3.69	
Toluene*	<0.050	0.050	06/06/2019	ND	2.29	114	2.00	4.21	
Ethylbenzene*	<0.050	0.050	06/06/2019	ND	2.13	106	2.00	2.62	
Total Xylenes*	<0.150	0.150	06/06/2019	ND	6.39	106	6.00	2.04	
Total BTX	<0.300	0.300	06/06/2019	ND					

Surrogate 4-Bromofluorobenzene (PIC) 103 % 73.3-129

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	368	16.0	06/06/2019	ND	432	108	400	7.69	QM-07

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	06/05/2019	ND	220	110	200	5.65	
DRO >C10-C28*	<10.0	10.0	06/05/2019	ND	199	99.6	200	7.49	
EXT DRO >C28-C36	<10.0	10.0	06/05/2019	ND					

Surrogate 1-Chlorooctane 92.5 % 41-142

Surrogate 1-Chlorooctadecane 99.7 % 37.6-147

Cardinal Laboratories

* = Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

APACHE CORP - HOBBS
BRUCE BAKER
2350 W. MARLAND BLVD.
HOBBS NM, 88240
Fax To: (575) 393-2432

Received: 06/03/2019
Reported: 06/10/2019
Project Name: CROW FED SWD #1
Project Number: NONE GIVEN
Project Location: NOT GIVEN

Sampling Date: 06/03/2019
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Tamara Oldaker

Sample ID: WC # 3 @ 1' (H901937-03)

BTEX 8021B		mg/kg		Analyzed By: ms					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	06/06/2019	ND	2.28	114	2.00	3.69	
Toluene*	<0.050	0.050	06/06/2019	ND	2.29	114	2.00	4.21	
Ethylbenzene*	<0.050	0.050	06/06/2019	ND	2.13	106	2.00	2.62	
Total Xylenes*	<0.150	0.150	06/06/2019	ND	6.39	106	6.00	2.04	
Total BTEX	<0.300	0.300	06/06/2019	ND					

Surrogate: 4-Bromofluorobenzene (PIE) 102 % 73.3-129

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	2240	16.0	06/06/2019	ND	432	108	400	7.69	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	06/05/2019	ND	220	110	200	5.65	
DRO >C10-C28*	<10.0	10.0	06/05/2019	ND	199	99.6	200	7.49	
EXT DRO >C28-C36	<10.0	10.0	06/05/2019	ND					

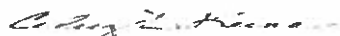
Surrogate: 1-Chlorooctane 90.8 % 41-142

Surrogate: 1-Chlorooctadecane 96.5 % 37.6-147

Cardinal Laboratories

*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

APACHE CORP - HOBBS
BRUCE BAKER
2350 W. MARLAND BLVD.
HOBBS NM, 88240
Fax To: (575) 393-2432

Received: 06/03/2019
Reported: 06/10/2019
Project Name: CROW FED SWD #1
Project Number: NONE GIVEN
Project Location: NOT GIVEN

Sampling Date: 06/03/2019
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Tamara Oldaker

Sample ID: WC # 4 @ 1' (H901937-04)

BTEX 8021B		mg/kg		Analyzed By: ms					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	06/06/2019	ND	2.28	114	2.00	3.69	
Toluene*	<0.050	0.050	06/06/2019	ND	2.29	114	2.00	4.21	
Ethylbenzene*	<0.050	0.050	06/06/2019	ND	2.13	106	2.00	2.62	
Total Xylenes*	<0.150	0.150	06/06/2019	ND	6.39	106	6.00	2.04	
Total BTEX	<0.300	0.300	06/06/2019	ND					

Surrogate: 4-Bromofluorobenzene (PIE) 102 % 73.3-129

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	1840	16.0	06/06/2019	ND	432	108	400	7.69	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	06/05/2019	ND	220	110	200	5.65	
DRO >C10-C28*	<10.0	10.0	06/05/2019	ND	199	99.6	200	7.49	
EXT DRO >C28-C36	<10.0	10.0	06/05/2019	ND					

Surrogate: 1-Chlorooctane 87.3 % 41-142

Surrogate: 1-Chlorooctadecane 85.8 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

APACHE CORP - HOBBS
BRUCE BAKER
2350 W. MARLAND BLVD.
HOBBS NM, 88240
Fax To: (575) 393-2432

Received: 06/03/2019
Reported: 06/10/2019
Project Name: CROW FED SWD #1
Project Number: NONE GIVEN
Project Location: NOT GIVEN

Sampling Date: 06/03/2019
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Tamara Oldaker

Sample ID: WC # 5 @ 1' (H901937-05)

BTX 8021B		mg/kg		Analyzed By: ms					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	06/06/2019	ND	2.28	114	2.00	3.69	
Toluene*	<0.050	0.050	06/06/2019	ND	2.29	114	2.00	4.21	
Ethylbenzene*	<0.050	0.050	06/06/2019	ND	2.13	106	2.00	2.62	
Total Xylenes*	<0.150	0.150	06/06/2019	ND	6.39	106	6.00	2.04	
Total BTX	<0.300	0.300	06/06/2019	ND					

Surrogate 4-Bromofluorobenzene (PIE) 101 % 73.3-129

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	3160	16.0	06/06/2019	ND	432	108	400	7.69	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	06/05/2019	ND	220	110	200	5.65	
DRO >C10-C28*	<10.0	10.0	06/05/2019	ND	199	99.6	200	7.49	
EXT DRO >C28-C36	<10.0	10.0	06/05/2019	ND					

Surrogate: 1-Chlorooctane 90.3 % 41-142

Surrogate: 1-Chlorooctadecane 85.7 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

APACHE CORP - HOBBS
BRUCE BAKER
2350 W. MARLAND BLVD.
HOBBS NM, 88240
Fax To: (575) 393-2432

Received: 06/03/2019
Reported: 06/10/2019
Project Name: CROW FED SWD #1
Project Number: NONE GIVEN
Project Location: NOT GIVEN

Sampling Date: 06/03/2019
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Tamara Oldaker

Sample ID: WC # 6 @ 6" (H901937-06)

BTX 80218		mg/kg		Analyzed By: ms					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	06/06/2019	ND	2.28	114	2.00	3.69	
Toluene*	<0.050	0.050	06/06/2019	ND	2.29	114	2.00	4.21	
Ethylbenzene*	<0.050	0.050	06/06/2019	ND	2.13	106	2.00	2.62	
Total Xylenes*	<0.150	0.150	06/06/2019	ND	6.39	106	6.00	2.04	
Total BTX	<0.300	0.300	06/06/2019	ND					

Surrogate: 4-Bromofluorobenzene (PIC) 101 % 73.3-129

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	816	16.0	06/06/2019	ND	432	108	400	7.69	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	06/05/2019	ND	220	110	200	5.65	
DRO >C10-C28*	<10.0	10.0	06/05/2019	ND	199	99.6	200	7.49	
EXT DRO >C28-C36	<10.0	10.0	06/05/2019	ND					

Surrogate: 1-Chlorooctane 84.2 % 41-142

Surrogate: 1-Chlorooctadecane 80.6 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

APACHE CORP - HOBBS
BRUCE BAKER
2350 W. MARLAND BLVD.
HOBBS NM, 88240
Fax To: (575) 393-2432

Received: 06/03/2019
Reported: 06/10/2019
Project Name: CROW FED SWD #1
Project Number: NONE GIVEN
Project Location: NOT GIVEN

Sampling Date: 06/03/2019
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Tamara Oldaker

Sample ID: WC # 7 ISLAND (H901937-07)

BTX 8021B		mg/kg		Analyzed By: ms					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	06/06/2019	ND	2.28	114	2.00	3.69	
Toluene*	<0.050	0.050	06/06/2019	ND	2.29	114	2.00	4.21	
Ethylbenzene*	<0.050	0.050	06/06/2019	ND	2.13	106	2.00	2.62	
Total Xylenes*	<0.150	0.150	06/06/2019	ND	6.39	106	6.00	2.04	
Total BTX	<0.300	0.300	06/06/2019	ND					

Surrogate: 4-Bromofluorobenzene (PIE) 101 % 73.3-129

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	2640	16.0	06/06/2019	ND	432	108	400	7.69	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	06/05/2019	ND	220	110	200	5.65	
DRO >C10-C28*	<10.0	10.0	06/05/2019	ND	199	99.6	200	7.49	
EXT DRO >C28-C36	<10.0	10.0	06/05/2019	ND					

Surrogate: 1-Chlorooctane 88.5 % 41-142

Surrogate: 1-Chlorooctadecane 85.4 % 37.6-147

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Coley D. Keene, Lab Director/Quality Manager

Analytical Results For:

APACHE CORP - HOBBS
BRUCE BAKER
2350 W. MARLAND BLVD.
HOBBS NM, 88240
Fax To: (575) 393-2432

Received: 06/03/2019
Reported: 06/10/2019
Project Name: CROW FED SWD #1
Project Number: NONE GIVEN
Project Location: NOT GIVEN

Sampling Date: 06/03/2019
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Tamara Oldaker

Sample ID: BFC # 1 (H901937-08)

BTEX 8021B		mg/kg		Analyzed By: ms					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	06/06/2019	ND	2.28	114	2.00	3.69	
Toluene*	<0.050	0.050	06/06/2019	ND	2.29	114	2.00	4.21	
Ethylbenzene*	<0.050	0.050	06/06/2019	ND	2.13	106	2.00	2.62	
Total Xylenes*	<0.150	0.150	06/06/2019	ND	6.39	106	6.00	2.04	
Total BTEX	<0.300	0.300	06/06/2019	ND					

Surrogate: 4-Bromofluorobenzene (PIC) 99.7 % 73.3-129

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	2400	16.0	06/06/2019	ND	432	108	400	7.69	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	06/05/2019	ND	220	110	200	5.65	
DRO >C10-C28*	<10.0	10.0	06/05/2019	ND	199	99.6	200	7.49	
EXT DRO >C28-C36	<10.0	10.0	06/05/2019	ND					

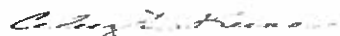
Surrogate: 1-Chlorooctane 66.6 % 41-142

Surrogate: 1-Chlorooctadecane 63.3 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

APACHE CORP - HOBBS
BRUCE BAKER
2350 W. MARLAND BLVD.
HOBBS NM, 88240
Fax To: (575) 393-2432

Received: 06/03/2019
Reported: 06/10/2019
Project Name: CROW FED SWD #1
Project Number: NONE GIVEN
Project Location: NOT GIVEN

Sampling Date: 06/03/2019
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Tamara Oldaker

Sample ID: BFC # 2 (H901937-09)

BTEX 8021B			mg/kg		Analyzed By: ms				
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	06/06/2019	ND	2.28	114	2.00	3.69	
Toluene*	<0.050	0.050	06/06/2019	ND	2.29	114	2.00	4.21	
Ethylbenzene*	<0.050	0.050	06/06/2019	ND	2.13	106	2.00	2.62	
Total Xylenes*	<0.150	0.150	06/06/2019	ND	6.39	106	6.00	2.04	
Total BTEX	<0.300	0.300	06/06/2019	ND					

Surrogate: 4-Bromofluorobenzene (PIL) 101 % 73.3-129

Chloride, SM4500Cl-B			mg/kg		Analyzed By: AC				
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	4880	16.0	06/06/2019	ND	432	108	400	7.69	

TPH 8015M			mg/kg		Analyzed By: MS				
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	06/05/2019	ND	220	110	200	5.65	
DRO >C10-C28*	<10.0	10.0	06/05/2019	ND	199	99.6	200	7.49	
EXT DRO >C28-C36	<10.0	10.0	06/05/2019	ND					

Surrogate: 1-Chlorooctane 99.7 % 41-142

Surrogate: 1-Chlorooctadecane 97.0 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

APACHE CORP - HOBBS
BRUCE BAKER
2350 W. MARLAND BLVD.
HOBBS NM, 88240
Fax To: (575) 393-2432

Received: 06/03/2019
Reported: 06/10/2019
Project Name: CROW FED SWD #1
Project Number: NONE GIVEN
Project Location: NOT GIVEN

Sampling Date: 06/03/2019
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Tamara Oldaker

Sample ID: BFC # 3 (H901937-10)

BTEX 8021B		mg/kg		Analyzed By: ms					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	06/06/2019	ND	2.28	114	2.00	3.69	
Toluene*	<0.050	0.050	06/06/2019	ND	2.29	114	2.00	4.21	
Ethylbenzene*	<0.050	0.050	06/06/2019	ND	2.13	106	2.00	2.62	
Total Xylenes*	<0.150	0.150	06/06/2019	ND	6.39	106	6.00	2.04	
Total BTEX	<0.300	0.300	06/06/2019	ND					

Surrogate: 4-Bromofluorobenzene (PIC) 99.7 % 73.3-129

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	48.0	16.0	06/06/2019	ND	432	108	400	7.69	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	06/05/2019	ND	220	110	200	5.65	
DRO >C10-C28*	<10.0	10.0	06/05/2019	ND	199	99.6	200	7.49	
EXT DRO >C28-C36	<10.0	10.0	06/05/2019	ND					

Surrogate: 1-Chlorooctane 95.1 % 41-142

Surrogate: 1-Chlorooctadecane 93.1 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

APACHE CORP - HOBBS
BRUCE BAKER
2350 W. MARLAND BLVD.
HOBBS NM, 88240
Fax To: (575) 393-2432

Received: 06/03/2019
Reported: 06/10/2019
Project Name: CROW FED SWD #1
Project Number: NONE GIVEN
Project Location: NOT GIVEN

Sampling Date: 06/03/2019
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Tamara Oldaker

Sample ID: BFC # 4 (H901937-11)

BTX 8021B		mg/kg		Analyzed By: ms					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	06/06/2019	ND	2.28	114	2.00	3.69	
Toluene*	<0.050	0.050	06/06/2019	ND	2.29	114	2.00	4.21	
Ethylbenzene*	<0.050	0.050	06/06/2019	ND	2.13	106	2.00	2.62	
Total Xylenes*	<0.150	0.150	06/06/2019	ND	6.39	106	6.00	2.04	
Total BTX	<0.300	0.300	06/06/2019	ND					

Surrogate: 4-Bromofluorobenzene (PIC) 101 % 73.3-129

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	2240	16.0	06/06/2019	ND	432	108	400	7.69	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	06/05/2019	ND	196	98.0	200	1.36	
DRO >C10-C28*	<10.0	10.0	06/05/2019	ND	194	97.1	200	2.48	
EXT DRO >C28-C36	<10.0	10.0	06/05/2019	ND					

Surrogate: 1-Chlorooctane 90.8 % 41-142

Surrogate: 1-Chlorooctadecane 95.6 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

APACHE CORP - HOBBS
BRUCE BAKER
2350 W. MARLAND BLVD.
HOBBS NM, 88240
Fax To: (575) 393-2432

Received: 06/03/2019
Reported: 06/10/2019
Project Name: CROW FED SWD #1
Project Number: NONE GIVEN
Project Location: NOT GIVEN

Sampling Date: 06/03/2019
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Tamara Oldaker

Sample ID: BFC # 5 (H901937-12)

BTEX 8021B		mg/kg		Analyzed By: ms					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	06/06/2019	ND	2.28	114	2.00	3.69	
Toluene*	<0.050	0.050	06/06/2019	ND	2.29	114	2.00	4.21	
Ethylbenzene*	<0.050	0.050	06/06/2019	ND	2.13	106	2.00	2.62	
Total Xylenes*	<0.150	0.150	06/06/2019	ND	6.39	106	6.00	2.04	
Total BTEX	<0.300	0.300	06/06/2019	ND					

Surrogate: 4-Bromofluorobenzene (PIE) 101 % 73.3-129

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	1090	16.0	06/06/2019	ND	432	108	400	7.69	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	06/05/2019	ND	196	98.0	200	1.36	
DRO >C10-C28*	<10.0	10.0	06/05/2019	ND	194	97.1	200	2.48	
EXT DRO >C28-C36	<10.0	10.0	06/05/2019	ND					

Surrogate: 1-Chlorooctane 95.3 % 41-142

Surrogate: 1-Chlorooctadecane 99.0 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

APACHE CORP - HOBBS
BRUCE BAKER
2350 W. MARLAND BLVD.
HOBBS NM, 88240
Fax To: (575) 393-2432

Received: 06/03/2019
Reported: 06/10/2019
Project Name: CROW FED SWD #1
Project Number: NONE GIVEN
Project Location: NOT GIVEN

Sampling Date: 06/03/2019
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Tamara Oldaker

Sample ID: BFC # 6 (H901937-13)

BTEX 8021B		mg/kg		Analyzed By: ms					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	06/06/2019	ND	2.28	114	2.00	3.69	
Toluene*	<0.050	0.050	06/06/2019	ND	2.29	114	2.00	4.21	
Ethylbenzene*	<0.050	0.050	06/06/2019	ND	2.13	106	2.00	2.62	
Total Xylenes*	<0.150	0.150	06/06/2019	ND	6.39	106	6.00	2.04	
Total BTEX	<0.300	0.300	06/06/2019	ND					

Surrogate: 4-Bromofluorobenzene (PIE) 101 % 73.3-129

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	2880	16.0	06/06/2019	ND	432	108	400	7.69	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	06/05/2019	ND	196	98.0	200	1.36	
DRO >C10-C28*	219	10.0	06/05/2019	ND	194	97.1	200	2.48	
EXT DRO >C28-C36	52.4	10.0	06/05/2019	ND					

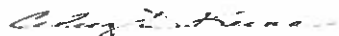
Surrogate: 1-Chlorooctane 103 % 41-142

Surrogate: 1-Chlorooctadecane 118 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

APACHE CORP - HOBBS
BRUCE BAKER
2350 W. MARLAND BLVD.
HOBBS NM, 88240
Fax To: (575) 393-2432

Received: 06/03/2019
Reported: 06/10/2019
Project Name: CROW FED SWD #1
Project Number: NONE GIVEN
Project Location: NOT GIVEN

Sampling Date: 06/03/2019
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Tamara Oldaker

Sample ID: BFC # 7 (H901937-14)

BTX 8021B		mg/kg		Analyzed By: ms					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	06/06/2019	ND	2.28	114	2.00	3.69	
Toluene*	<0.050	0.050	06/06/2019	ND	2.29	114	2.00	4.21	
Ethylbenzene*	<0.050	0.050	06/06/2019	ND	2.13	106	2.00	2.62	
Total Xylenes*	<0.150	0.150	06/06/2019	ND	6.39	106	6.00	2.04	
Total BTX	<0.300	0.300	06/06/2019	ND					

Surrogate: 4-Bromofluorobenzene (PIL) 101 % 73.3-129

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	7440	16.0	06/06/2019	ND	432	108	400	7.69	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	06/05/2019	ND	196	98.0	200	1.36	
DRO >C10-C28*	<10.0	10.0	06/05/2019	ND	194	97.1	200	2.48	
EXT DRO >C28-C36	<10.0	10.0	06/05/2019	ND					

Surrogate: 1-Chlorooctane 93.1 % 41-142

Surrogate: 1-Chlorooctadecane 96.5 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

APACHE CORP - HOBBS
BRUCE BAKER
2350 W. MARLAND BLVD.
HOBBS NM, 88240
Fax To: (575) 393-2432

Received: 06/03/2019
Reported: 06/10/2019
Project Name: CROW FED SWD #1
Project Number: NONE GIVEN
Project Location: NOT GIVEN

Sampling Date: 06/03/2019
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Tamara Oldaker

Sample ID: BFC # 8 (H901937-15)

BTX 8021B		mg/kg		Analyzed By: ms					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	06/06/2019	ND	2.28	114	2.00	3.69	
Toluene*	<0.050	0.050	06/06/2019	ND	2.29	114	2.00	4.21	
Ethylbenzene*	<0.050	0.050	06/06/2019	ND	2.13	106	2.00	2.62	
Total Xylenes*	<0.150	0.150	06/06/2019	ND	6.39	106	6.00	2.04	
Total BTX	<0.300	0.300	06/06/2019	ND					

Surrogate: 4-Bromofluorobenzene (PIC) 103 % 73.3-129

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	240	16.0	06/06/2019	ND	432	108	400	7.69	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	06/05/2019	ND	196	98.0	200	1.36	
DRO >C10-C28*	<10.0	10.0	06/05/2019	ND	194	97.1	200	2.48	
EXT DRO >C28-C36	<10.0	10.0	06/05/2019	ND					

Surrogate: 1-Chlorooctane 101 % 41-142

Surrogate: 1-Chlorooctadecane 103 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

APACHE CORP - HOBBS
BRUCE BAKER
2350 W. MARLAND BLVD.
HOBBS NM, 88240
Fax To: (575) 393-2432

Received: 06/03/2019
Reported: 06/10/2019
Project Name: CROW FED SWD #1
Project Number: NONE GIVEN
Project Location: NOT GIVEN

Sampling Date: 06/03/2019
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Tamara Oldaker

Sample ID: BFC # 9 (H901937-16)

BTX 8021B		mg/kg		Analyzed By: ms					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	06/06/2019	ND	2.28	114	2.00	3.69	
Toluene*	<0.050	0.050	06/06/2019	ND	2.29	114	2.00	4.21	
Ethylbenzene*	<0.050	0.050	06/06/2019	ND	2.13	106	2.00	2.62	
Total Xylenes*	<0.150	0.150	06/06/2019	ND	6.39	106	6.00	2.04	
Total BTX	<0.300	0.300	06/06/2019	ND					

Surrogate: 4-Bromofluorobenzene (PIC) 101 % 73.3-129

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	7120	16.0	06/06/2019	ND	432	108	400	7.69	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	06/05/2019	ND	196	98.0	200	1.36	
DRO >C10-C28*	<10.0	10.0	06/05/2019	ND	194	97.1	200	2.48	
EXT DRO >C28-C36	<10.0	10.0	06/05/2019	ND					

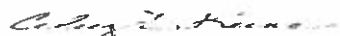
Surrogate: 1-Chlorooctane 101 % 41-142

Surrogate: 1-Chlorooctadecane 103 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

APACHE CORP - HOBBS
BRUCE BAKER
2350 W. MARLAND BLVD.
HOBBS NM, 88240
Fax To: (575) 393-2432

Received: 06/03/2019
Reported: 06/10/2019
Project Name: CROW FED SWD #1
Project Number: NONE GIVEN
Project Location: NOT GIVEN

Sampling Date: 06/03/2019
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Tamara Oldaker

Sample ID: BFC # 10 (H901937-17)

BTX 8021B		mg/kg		Analyzed By: ms					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	06/06/2019	ND	2.28	114	2.00	3.69	
Toluene*	<0.050	0.050	06/06/2019	ND	2.29	114	2.00	4.21	
Ethylbenzene*	<0.050	0.050	06/06/2019	ND	2.13	106	2.00	2.62	
Total Xylenes*	<0.150	0.150	06/06/2019	ND	6.39	106	6.00	2.04	
Total BTX	<0.300	0.300	06/06/2019	ND					

Surrogate: 4-Bromofluorobenzene (PIE) 101 % 73.3-129

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	5120	16.0	06/06/2019	ND	432	108	400	7.69	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	06/05/2019	ND	196	98.0	200	1.36	
DRO >C10-C28*	156	10.0	06/05/2019	ND	194	97.1	200	2.48	
EXT DRO >C28-C36	29.9	10.0	06/05/2019	ND					


Surrogate: 1-Chlorooctane 96.5 % 41-142

Surrogate: 1-Chlorooctadecane 111 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

APACHE CORP - HOBBS
BRUCE BAKER
2350 W. MARLAND BLVD.
HOBBS NM, 88240
Fax To: (575) 393-2432

Received: 06/03/2019
Reported: 06/10/2019
Project Name: CROW FED SWD #1
Project Number: NONE GIVEN
Project Location: NOT GIVEN

Sampling Date: 06/03/2019
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Tamara Oldaker

Sample ID: BFC # 11 (H901937-18)

BTX 8021B		mg/kg		Analyzed By: ms					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	06/06/2019	ND	2.28	114	2.00	3.69	
Toluene*	<0.050	0.050	06/06/2019	ND	2.29	114	2.00	4.21	
Ethylbenzene*	<0.050	0.050	06/06/2019	ND	2.13	106	2.00	2.62	
Total Xylenes*	<0.150	0.150	06/06/2019	ND	6.39	106	6.00	2.04	
Total BTX	<0.300	0.300	06/06/2019	ND					

Surrogate: 4-Bromofluorobenzene (PIE) 101 % 73.3-129

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	112	16.0	06/06/2019	ND	432	108	400	7.69	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	06/05/2019	ND	196	98.0	200	1.36	
DRO >C10-C28*	125	10.0	06/05/2019	ND	194	97.1	200	2.48	
EXT DRO >C28-C36	39.2	10.0	06/05/2019	ND					

Surrogate: 1-Chlorooctane 94.8 % 41-142

Surrogate: 1-Chlorooctadecane 108 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

 APACHE CORP - HOBBS
 BRUCE BAKER
 2350 W. MARLAND BLVD.
 HOBBS NM, 88240
 Fax To: (575) 393-2432

 Received: 06/03/2019
 Reported: 06/10/2019
 Project Name: CROW FED SWD #1
 Project Number: NONE GIVEN
 Project Location: NOT GIVEN

 Sampling Date: 06/03/2019
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

Sample ID: BFC # 12 (H901937-19)

BTX 8021B		mg/kg		Analyzed By: ms					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	06/06/2019	ND	2.28	114	2.00	3.69	
Toluene*	<0.050	0.050	06/06/2019	ND	2.29	114	2.00	4.21	
Ethylbenzene*	<0.050	0.050	06/06/2019	ND	2.13	106	2.00	2.62	
Total Xylenes*	<0.150	0.150	06/06/2019	ND	6.39	106	6.00	2.04	
Total BTX	<0.300	0.300	06/06/2019	ND					

Surrogate: 4-Bromofluorobenzene (PIL) 101 % 73.3-129

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	32.0	16.0	06/06/2019	ND	432	108	400	7.69	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	06/05/2019	ND	196	98.0	200	1.36	
DRO >C10-C28*	12.1	10.0	06/05/2019	ND	194	97.1	200	2.48	
EXT DRO >C28-C36	<10.0	10.0	06/05/2019	ND					

Surrogate: 1-Chlorooctane 94.6 % 41-142

Surrogate: 1-Chlorooctadecane 97.4 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

APACHE CORP - HOBBS
BRUCE BAKER
2350 W. MARLAND BLVD.
HOBBS NM, 88240
Fax To: (575) 393-2432

Received: 06/03/2019
Reported: 06/10/2019
Project Name: CROW FED SWD #1
Project Number: NONE GIVEN
Project Location: NOT GIVEN

Sampling Date: 06/03/2019
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Tamara Oldaker

Sample ID: BFC # 13 (H901937-20)

BTX 8021B		mg/kg		Analyzed By: ms					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	06/07/2019	ND	1.89	94.5	2.00	4.34	
Toluene*	<0.050	0.050	06/07/2019	ND	1.89	94.5	2.00	4.16	
Ethylbenzene*	<0.050	0.050	06/07/2019	ND	1.78	88.8	2.00	5.01	
Total Xylenes*	<0.150	0.150	06/07/2019	ND	5.40	90.0	6.00	5.66	
Total BTX	<0.300	0.300	06/07/2019	ND					

Surrogate: 4-Bromofluorobenzene (PIE) 103 % 73.3-129

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	48.0	16.0	06/06/2019	ND	432	108	400	7.69	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	06/05/2019	ND	196	98.0	200	1.36	
DRO >C10-C28*	<10.0	10.0	06/05/2019	ND	194	97.1	200	2.48	
EXT DRO >C28-C36	<10.0	10.0	06/05/2019	ND					

Surrogate: 1-Chlorooctane 109 % 41-142

Surrogate: 1-Chlorooctadecane 114 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

APACHE CORP - HOBBS
BRUCE BAKER
2350 W. MARLAND BLVD.
HOBBS NM, 88240
Fax To: (575) 393-2432

Received: 06/03/2019
Reported: 06/10/2019
Project Name: CROW FED SWD #1
Project Number: NONE GIVEN
Project Location: NOT GIVEN

Sampling Date: 06/03/2019
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Tamara Oldaker

Sample ID: BFC # 14 (H901937-21)

BTEX 8021B		mg/kg		Analyzed By: ms					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	06/07/2019	ND	1.89	94.5	2.00	4.34	
Toluene*	<0.050	0.050	06/07/2019	ND	1.89	94.5	2.00	4.16	
Ethylbenzene*	<0.050	0.050	06/07/2019	ND	1.78	88.8	2.00	5.01	
Total Xylenes*	<0.150	0.150	06/07/2019	ND	5.40	90.0	6.00	5.66	
Total BTEX	<0.300	0.300	06/07/2019	ND					

Surrogate: 4-Bromofluorobenzene (PFC) 102 % 73.3-129

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	48.0	16.0	06/06/2019	ND	432	108	400	7.69	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	06/05/2019	ND	196	98.0	200	1.36	
DRO >C10-C28*	<10.0	10.0	06/05/2019	ND	194	97.1	200	2.48	
EXT DRO >C28-C36	<10.0	10.0	06/05/2019	ND					

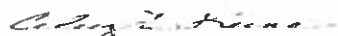
Surrogate: 1-Chlorooctane 103 % 41-142

Surrogate: 1-Chlorooctadecane 110 % 37.6-147

Cardinal Laboratories

*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

APACHE CORP - HOBBS
BRUCE BAKER
2350 W. MARLAND BLVD.
HOBBS NM, 88240
Fax To: (575) 393-2432

Received: 06/03/2019
Reported: 06/10/2019
Project Name: CROW FED SWD #1
Project Number: NONE GIVEN
Project Location: NOT GIVEN

Sampling Date: 06/03/2019
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Tamara Oldaker

Sample ID: BFC # 15 (H901937-22)

BTEX 8021B		mg/kg		Analyzed By: ms					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	06/07/2019	ND	1.89	94.5	2.00	4.34	
Toluene*	<0.050	0.050	06/07/2019	ND	1.89	94.5	2.00	4.16	
Ethylbenzene*	<0.050	0.050	06/07/2019	ND	1.78	88.8	2.00	5.01	
Total Xylenes*	<0.150	0.150	06/07/2019	ND	5.40	90.0	6.00	5.66	
Total BTEX	<0.300	0.300	06/07/2019	ND					

Surrogate: 4-Bromofluorobenzene (PIE) 104 % 73.3-129

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	2000	16.0	06/06/2019	ND	384	96.0	400	0.00	QM-07

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	06/05/2019	ND	196	98.0	200	1.36	
DRO >C10-C28*	<10.0	10.0	06/05/2019	ND	194	97.1	200	2.48	
EXT DRO >C28-C36	<10.0	10.0	06/05/2019	ND					

Surrogate: 1-Chlorooctane 104 % 41-142

Surrogate: 1-Chlorooctadecane 107 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager

Notes and Definitions

QM-07	The spike recovery was outside acceptance limits for the MS and/or MSD. The batch was accepted based on acceptable LCS recovery.
ND	Analyte NOT DETECTED at or above the reporting limit
RPD	Relative Percent Difference
**	Samples not received at proper temperature of 6°C or below.
***	Insufficient time to reach temperature.
-	Chloride by SM4500Cl-B does not require samples be received at or below 6°C Samples reported on an as received basis (wet) unless otherwise noted on report

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Celey D. Keene, Lab Director/Quality Manager

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101 East Marland, Hobbs, NM 88240
(575) 393-2326 FAX (575) 393-2476

Company Name: Apache Project Manager: Bruce Baker Address: City: Hobbs State: NM Zip: 88240 Phone #: Fax #:				P.O. #: Company: Attn: Address: City: State: Zip:			
Project Name: Project Location: New Feed SCD #1 Project Name: SOSO Chascola Sample Name: SOSO Chascola FOR LAB USE ONLY				Fax #:			
Lab I.D. Sample I.D.				Matrix			
H901937 1 WC #1 @ 1' 2 WC #2 @ 1' 3 WC #3 @ 1' 4 WC #4 @ 1' 5 WC #5 @ 1' 6 WC #6 @ 1' 7 WC #7 Island 8 BEC #1 9 BEC #2 10 BEC #3				(G)RAB OR (C)OMP # CONTAINERS GROUNDWATER WASTEWATER SOIL OIL SLUDGE OTHER:		ACID/BASE: ICE / COOL OTHER:	
				DATE TIME		EXT TPH BTEX	
Relinquished By: [Signature] Date: 6-3-19 Time: 14:00				Received By: [Signature] Date: 6-3-19 Time: 14:00			
Relinquished By: [Signature] Date: 6-3-19 Time: 14:00				Received By: [Signature]			
Delivered By: (Circle One) Sample - UPS - Bus - Other:				Sample Condition Cool Intact <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No			
Checked By: [Signature] (Initials)				Checked By: [Signature] (Initials)			
Phone Result: <input type="checkbox"/> Yes <input type="checkbox"/> No Fax Result: <input type="checkbox"/> Yes <input type="checkbox"/> No Add'l Phone #: Add'l Fax #: REMARKS:				F-mail Results			



CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

101 East Marland, Hobbs, NM 88240
(575) 393-2326 FAX (575) 393-2476

Company Name: <u>APelle</u>				BILL TO				ANALYSIS REQUEST			
Project Manager: <u>Bruce Baker</u>				P.O. #:							
Address:				Company:							
City: <u>Hobbs</u>				State: <u>NM</u>				Attn:			
Phone #:				Fax #:							
Project #:				Project Owner:							
Project Name:				State:				Zip:			
Project Location: <u>Chad Field SOD #1</u>				Phone #:							
Sample Name: <u>See Attached</u>				Fax #:							

Lab I.D.	Sample I.D.	(G)RAB OR (C)OMP	# CONTAINERS	MATRIX						DATE	TIME	CC	EXT	TPH	BTex	
				GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER							
H901937																
11	BFC #4	G	1							6-3-19	2:42PM	1	1	1		
12	BFC #5	G	1								2:42	1	1	1		
13	BFC #4	G	1								2:44	1	1	1		
14	BFC #7	G	1								2:46	1	1	1		
15	BFC #6	G	1								2:48	1	1	1		
16	BFC #9	G	1								2:50	1	1	1		
17	BFC #10	G	1								2:52	1	1	1		
18	BFC #11	G	1								2:54	1	1	1		
19	BFC #12	G	1								2:56	1	1	1		
20	BFC #13	G	1								2:58	1	1	1		

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Relinquished By: <u>See Attached</u>	Date: <u>6-3-19</u>	Received By: <u>Monica Delgado</u>
Relinquished By:	Date:	Received By:
Time:	Time:	

Delivered By: (Circle One) Sampler - UPS - Bus - Other: <u>0.7% #47</u>	Sample Condition Cool <input checked="" type="checkbox"/> Intact <input checked="" type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	CHECKED BY: (Initials) <u>VS</u>
---	---	--

REMARKS: F - Met Results

101 East Marland, Hobbs, NM 88240
(575) 393-2326 FAX (575) 393-2476

[illegible]

Crow Federal SWD # 001 (GPS 32.85386 -103.86825) Photos



Photo of excavation facing southwest 11/15/2018



Photo of excavation facing south 11/15/2018



Photo of excavation facing east 11/15/2018



Photo of excavation facing south west 11/15/2018



Photo of the excavation facing south 11/15/2018

Crow Federal Photo Page





June 3 2019 Crow Fed SWD #1 well sample lamps 17

WC #1 @ 1' 32.8538156 - 103.8684553

11.2/30.2 1.30 2.69 = 3495 x

WC #2 @ 1' 32.8535280 - 103.8685734

11.3/30.2 0.23 2.67 = 613 x

WC #3 @ 1' 32.8934464 - 103.8684475

11.0/30.1 0.55 2.73 = 1501 x

WC #4 @ 1' 32.8532957 - 103.8682216

11.0/30.0 1.70 2.72 = 4622 x

WC #5 @ 1' 32.8536164 - 103.8683688

11.1/30.1 greater 2.0 2.71 = x

WC #6 @ 6" 32.8540038 - 103.8683175

11.2/30.1 1.74 2.68 = 4461 x

WC #4M Island 32.8536959 - 103.8683138

11.0/30.2 0.75 2.74 = 2054 x

Flow

BFC #9 32.8535075 - 103.8684745

BFC #10 32.8534880 - 103.8683111

BFC #11 32.8533509 - 103.8682223

BFC #12 32.8533537 - 103.8682755

BFC #13 32.8535044 - 103.8687164

BFC #14 32.8534940 - 103.8689049

BFC #15 32.8535275 - 103.8688720

BFC #8 32.85348, -103.86857

BFC #7 ~~32.85337~~ 32.83537, -103.86847

BFC #6 32.85355, -103.86836

BFC #5 32.85362, -103.86841

~~BFC 5 32.85368, -103.86841~~

BFC 4 32.85371, -103.86834

BFC 3 32.85375, -103.86824

BFC 2 32.85377, -103.86831

BFC 1 32.85381, -103.86821